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EXAMINER
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GILLESPIE, BENJAMIN

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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11/23/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/797,826

Applicant(s)

HUYNH, DIEU DAI

Examiner

Benjamin J. Gillespie

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 7-10, 12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-10, 12-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

*Note*

1. In view of applicant's remarks filed November 12th, 2007, the finality of the office action mailed September 12th, 2007 has been removed, and prosecution has been reopened.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term “substantially” renders claim 10 indefinite because “substantially” is relative language.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 7-8, 10, 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Reischl et al ('095). Reischl et al also teach water-dispersible polyurethane resin comprising the reaction product of polyether and polyester polyol, and aliphatic diisocyanate (Abstract; col 2 line 27). In particular, patentees explain that the polyurethane is preferably synthesized by mixing separate salt-free polyether based polyurethane resin, and salt-containing polyester based polyurethane resin in amounts that correspond to applicant's claimed amounts (Col 1 lines 24-50). Reischl et al explain the separate resins result in a final polyurethane that exhibits improved dispersion

stability and the ability to re-disperse quickly if the resin settles (Col 1 lines 10-23). Although patentees do not explicitly teach the polyurethane useful in image transfer layers, based on a composition that is analogous claims, the position is taken that the polyurethane of Reischl et al would inherently perform as a dye transfer layer.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7-8, 10, and 12-13 rejected under 35 U.S.C. 103(a) as being unpatentable over Ramello et al ('972) and Otto Bayer et al ('310) in view of Reischl et al ('095). Ramello et al disclose a dye transfer coating composition comprising water dispersible polyurethane resin, and multifunctional cross-linking agent (Col 3 lines 45-46, 50-52, 64-66; col 4 lines 60-65; col 7 lines 64-67). In particular, patentees explain that the polyurethane resin is based on compounds such as those listed in U.S. Patent 3,479,310 (Bayer Otto et al), which are the reaction product of linear polyether polyol, polyester polyol, and aliphatic diisocyanate compounds (Otto Bayer; col 2 lines 55-62; col 3 lines 36-39). However, patentees fail to explicitly teach separate polyether and polyester based polyurethane resins in amounts that correspond to applicant's claims.

5. Reischl et al also teach water-dispersible polyurethane resin comprising the reaction product of polyether and polyester polyol, and aliphatic diisocyanate (Abstract; col 2 line 27). In particular, patentees explain that the polyurethane is preferably synthesized by mixing separate salt-free polyether based polyurethane resin, and salt-containing polyester based polyurethane

resin in amounts that correspond to applicant's claimed amounts (Col 1 lines 24-50). Reischl et al explain the separate resins result in a final polyurethane that exhibits improved dispersion stability and the ability to re-disperse quickly if the resin settles (Col 1 lines 10-23).

6. Therefore, it would have been obvious to separate the polyether and polyester resins of Ramello et al in their corresponding amounts to obtain a final polyurethane that exhibits enhanced dispersion properties.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ramello et al ('972) and Otto Bayer et al ('310) in view of Reischl et al ('972) in further view of Rhoades et al ('824). Aforementioned, Ramello et al in view of Reischl et al renders obvious an aqueous dye receiving coating composition containing both polyester and polyether based polyurethane, and multifunctional cross-linking compound that consists of ethylene diamine, and diethylenetriamine, but fail to teach polyfunctional aziridine (Col 7 lines 64-67; col 8 lines 1-2).

8. Rhoades et al teach a water dispersible polyurethane composition useful in receiving aqueous dye coatings, wherein the polyurethane is the reaction product of an isocyanate-terminated prepolymer and multi-functional cross-linker (Abstract; col 6 lines 56-62). In particular, patentees disclose chain extenders consisting of compounds such as ethylene diamine, diethylene triamine, and polyaziridine, wherein the polyaziridine provides superior intra-molecular cross-linking, which provides improved solvent resistance for the cured coating (Col 7 lines 6-7, 36-38, and 51-52).

9. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include polyaziridine as the cross-linking agent in Ramello et al based on motivation that both compositions are water-dispersible polyurethanes that are in contact with dye

compositions and polyaziridine improves the performance properties of the resulting cured coating.

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reischl et al ('972) in view of Rhoades et al ('824). Aforementioned, Reischl et al teach water-dispersible polyurethane that consists of polyether and polyester based resins and multi-functional chain extender; however patentees are silent in teaching chain extender that consists of polyaziridine (Col 1 lines 36-38).

11. Aforementioned, Rhoades et al teach a water dispersible polyurethane composition based on polyester and polyether backbones. Patentees go on to disclose that said resin is preferably chain extended with polyaziridine because it results in a polymer that has superior intra-molecular cross-linking, thereby improving solvent resistance for the cured coating (Col 7 lines 6-7, 36-38, and 51-52). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include polyaziridine as the cross-linking agent in Reischl et al based on motivation that both compositions are water-dispersible polyurethanes and polyaziridine improves the performance properties of the resulting cured coating.

#### ***Response to Arguments***

12. Applicant's arguments, filed 11/12/2007, with respect to the obvious double patenting rejection have been considered and the rejection has been removed. Applicant's arguments, filed 11/12/2007, with respect to claims 7-8, 10, and 12-13 have been considered but are moot in view of the new ground(s) of rejection.

13. Applicant's arguments filed 11/12/2007, with respect to the rejection of claim 9 under 35 U.S.C. 103(a) have been fully considered but they are not persuasive. Applicants argue that it

would not have been obvious to utilize the multi-functional cross-linking compound of Rhoades et al in Ramello et al because the polyurethane in each reference is drawn to different applications.

14. While the examiner notes the polyurethane in Rhoades et al is drawn to support substrates for the dye transfer layers, patentees teach that said support layer is dye permeable and of similar material to the receiving layer (Col 1 lines 18-21; col 3 lines 11-20). Furthermore, the polyurethane of Rhoades et al is based on polyester and polyether polyols, therefore one would reasonably expect that it would exhibit similar properties to that of Ramello et al (Col 5 lines 34-40). Therefore, applicant's assertions that the teachings of Rhoades et al are not applicable to Ramello et al are not persuasive because Rhoades et al teach analogous compositions that result in a polyurethanes having relevant dye transferring properties.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin J. Gillespie whose telephone number is 571-272-2472. The examiner can normally be reached on 8am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

B. Gillespie

  
**RABON SERGENT**  
**PRIMARY EXAMINER**